FHTET
Forest Health Technology Enterprise Team

REMOTE SENSING IMAGERY ACQUISITION SERVICES

PROVIDING TECHNOLOGY FOR FOREST HEALTH PROTECTION

The Forest Health Technology Enterprise Team (FHTET), located in Fort Collins, Colorado, provides **remote sensing and image analysis** expertise and services in the detection, monitoring, and evaluation of forest health-related concerns. Services are provided on a cost-reimbursable basis to USDA Forest Service units and other federal agencies.

Aerial Imagery Acquisition

FHTET provides its customers with high quality imagery to support their specific forest health concerns. The remote sensing platform is a Beechcraft King Air A100, which is pressurized and equipped with a 20-inch optical window camera port for use with large-format cameras (9x9). A service ceiling of 23,000 feet above mean sea level allows for the collection of photography up to 1:30,000 scale. Additional remote sensing capability includes airborne video and color infrared (CIR) digital still-frame cameras. A total service package is available that includes mission planning, preparation of flight maps, acquisition of imagery, purchasing and processing of film, index map(s) of photo/video coverage, and delivery of products (film, photos, digital images) to the end-user. The King Air is available for aerial remote sensing year-round. FHTET's aerial acquisition services are designed to meet the needs of customers with small, specialized projects that require short turn-around times.

Scanned infra-red aerial photograph:
Telluride, Colorado.

Equipment

Aerial Photography – the unit maintains two mapping camera systems: a Zeiss RMK A 21/23 mapping camera (9x9 inch film format) with an 8 ¼ inch focal length lens and a Zeiss RMK A 15/23 mapping camera with a 6 inch focal length lens. GPS is utilized for navigation. Aerial photography is best suited to mapping large blocks or several smaller sample blocks.

Airborne Videography - The video system consists SONY VX2000 digital video camera, Trimble Pathfinder Pro XRS real-time differential GPS receiver, Horita time-code generator, and a Watson 2-axis Gyroscope (for tilt/roll measurement). The positional data is encoded in the audio track for post-processing with the Airborne Video Toolkit (AVT) software package. Airborne videography is best suited for low level sampling projects.

Digital Color Infrared Camera - The Kodak DCS-420 camera produces color infrared images. These images are stored on CD-R in the native Kodak format and/or a post-processed 24-bit .tiff format that can be view on a PC/MAC with most photo-processing software. The AVT software can also be used to post-processed imagery for an auto-mosaicked image. The types of photo and video coverage that can be acquired are: block areas (wall-to-wall coverage); sample points/ground plots; or sample strips/transects. However, due to the small footprint of the imagery, it is recommended for small project areas.

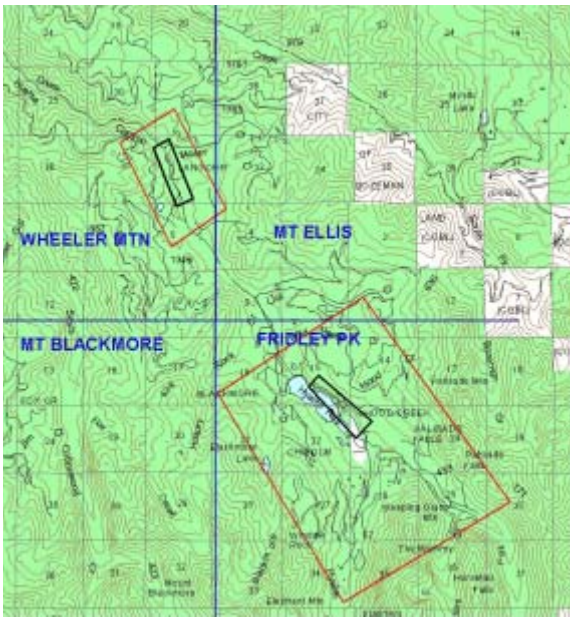
UMAX Medium format scanner – This scanner will scan 9x9 photographs and transparencies (negatives/positives) at resolutions up to 700x1400. Though not photogrametric quality, the resultant image is usable for most forest health mapping needs.

Mission Cost Estimates and Procedures

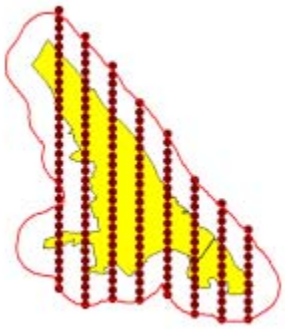
Due to the variable needs of different missions, it is difficult to provide cost estimates by flight line mile, square mile, etc. Costs vary greatly by scale/ swath width, type of sensor and imagery, size and configuration of the project area, ferry time, etc.

FHTET requests that the customer provide a general map of the area(s) to be covered by a remote sensing mission and mission specifications. Electronic ArcView shapefiles are preferred; however, paper maps can be sent by either mail or facsimile. If mission specifications are unknown, FHTET can provide consultation on mission designs.

A cost estimate will be prepared and sent to the customer. Once the customer agrees on cost and mission parameters, funds are transferred via an Interagency Service Agreement (ISA FS-6500-46). FHTET strives to make accurate cost estimates and provide its customer with high-quality imagery at a reasonable cost (actual costs may vary due to weather conditions).



A mission request drawn on a map.


Planned flight lines over an area of interest.

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